

Tender specification

Supply of marine acoustic telemetry equipment

**10th June 2022**

## Objective of the contract

Objective

The purpose of this document is to describe and define the modalities of supply of marine acoustic telemetry equipment and its accessories. The objective of this contract is to enable the Isles of Scilly Inshore Fisheries and Conservation Authority (IoSIFCA) to study the behaviour and movement of species of fish at different spatiotemporal scales, and to understand changes in space occupation as a function of variations in environmental conditions or anthropogenic pressures.

## Context

To follow the trajectory of fish or crustaceans in space and time (the term fish will be mostly used in the rest of the document), it is not possible to use classical technologies such as GPS. As part of the Intereg funded ‘Fish Intel’ project, we will use acoustic telemetry to study movements of crawfish (*Palinurus elephas*). The electronic tags to be acquired will make it possible to acoustically transmit the unique identification of the fish within an array of receivers. The position of the fish will therefore be known when it is within the acoustic telemetry network.

The acoustic and/or electronic tags sought will be attached to the outside carapace of an individual crawfish.

The deployment of this acoustic telemetry equipment in a network is part of a national and international scientific collaborative effort on the tracking of marine species on the continental shelf of the northeast Atlantic. It is therefore important that the equipment from different suppliers be compatible with each other so that tagged fish can be detected beyond the network that will be deployed within the framework of this public contract. The deployed network will also have to be capable of detecting tagged fish outside the tags acquired within the framework of this public market. The deployed acoustic telemetry network will be part of the European Tracking Network and will therefore allow for compatibility between multiple equipment vendors.

# Contract description

## Contract quantity

The maximum order quantity will be 4 receivers.

## Form and duration of the contract

The contract is a purchase order contract and will be concluded for 1 year from its notification. The contract will is for four acoustic receivers (and necessary accessories)

## Details on delivery terms and conditions

### Place of delivery

The equipment will be delivered to Isles of Scilly IFCA, Town Hall, Isles of Scilly, TR21 OLW

### Provisional delivery schedule

* Four receivers required by September 2022

# Technical specifications

## Acoustic receiver and accessories

Acoustic receivers must be compatible with transmitter tags commonly in use and have the following basic characteristics (see table below):

* Robust design that can be deployed up to a depth of 200m;
* Data download (fish identifier and environmental variables recorded at the time of transmission) with a communication system;
* Large data storage capacity (> 1 million detections);
	+ An interface software that can interrogate the receivers, download the data and visualise them;
	+ Accoustic release canister (or equivalent) including rope and floats to contain acoustic release receiver and enable remote recovery of receivers to the surface
	+ Ability to operate at 69Khz;
	+ Including batteries.

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| **Detailed specifications** |
| Model | specify |
| Dimension | specify |
| Weight | specify |
| Power supply | specify |
| Detection | assist with range test data |
| Battery Life | > 12 months |
| Maximum depth | 200 m |
| Receive frequency | 69 kHz |
| Retrieval method | Specify |
| Data storage / Capacity | specify |
| Acoustic communication from surface | required |
| Attachment | Specify |
| Transmitters | logs and decodes all |
| Compatibility across different telemetry equipment vendors | specify |

The offer should specify the characteristics of the proposed programming interface (software). In the same way, the offer will have to detail all the accessories necessary for the deployment of an acoustic telemetry network, for example, directional hydrophones (and their communication case, etc.) adapted to communicate from the surface with the receivers or to make active tracking from a light boat.

Different models of acoustic receivers (and accessories) can be proposed in relation, in particular, with particular specificities making them more adapted to the conditions of installation. For example, it could be a cabled receiver for installation on an already instrumented buoy and autonomous in energy; a simple receiver with batteries for fixing on a navigational buoy or easily accessible structures at sea; a receiver with an acoustic release for immersion on the bottom and easy recovery; a receiver allowing the positioning of neighbouring receivers to allow the tracking of movements on a fine scale by triangulation.

A minimum warranty of 1 year is required. The conditions of replacement of the receivers in case of malfunction will have to be indicated.

In particular, an acoustic receiver with the following characteristics will be sought:

* + Receiver with a remote release system via an acoustic communication system (the reliability of the acoustic release should be specified);
	+ Complimentary receiver retrieval system e.g. rope canister